

Animal-test research has saved many human lives

By Frankie L. Trull

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Animal research has played a vital role in virtually every major medical advance of the last century -- for both human and animal health. From antibiotics to blood transfusions, from dialysis to organ-transplantation, from vaccinations to chemotherapy, bypass surgery and joint replacement, practically every present-day protocol for the prevention, treatment, cure and control of disease, pain and suffering is based on knowledge attained through research with animals.

Within the American animal-rights movement is a vocal anti-research element that dismisses the importance of animal studies, claiming that the results of animal research can't be applied to human health. However, physicians and researchers overwhelmingly agree that animal systems provide invaluable and irreplaceable insights into human systems because there are striking similarities between our physiological and genetic systems.

Approximately 95 percent of all lab animals are specialty-bred rats and mice. Non-human primates account for less than one-fourth of 1 percent; dogs and cats combined, less than one-half of 1 percent. The balance includes rabbits, guinea pigs, woodchucks, pigs, sheep, armadillos, leeches, zebra fish, squid, horseshoe crabs, sea snails and fruit

flies.

Rodents are the animal model of choice for modern medical researchers because they have a naturally short life span -- two to three years -- that allows scientists to observe in "fast forward" what happens during the progress or pathogenesis of a disease.

Advances in genetic engineering have enabled scientists to develop excellent rodent models for research. The availability of "transgenic mice" (which have added genes) and "knock-out mice" (which have disabled genes) has revolutionized our understanding of cancer, Parkinson's disease, cystic fibrosis, heart disease, memory loss, muscular dystrophy and spinal cord injuries. The so-called "nude mouse" -- lacking a functioning immune system -- has become an incredibly important model for understanding cancer suppression.

Thanks to animal research, many diseases that once killed millions of people every year are either treatable or have been eradicated altogether. Immunizations against polio, diphtheria, mumps, rubella and hepatitis save countless lives, and the survival rates from many major diseases are at an all-time high, thanks to the discovery of new drugs, medical devices and surgical procedures. According to the American Cancer Society, the fight against cancer has seen 24 significant biomedical advances in the past 30 years.

None of them could have occurred without animal research.

Eight of the discoveries required the use of living animals, and virtually all of those that did not use animals relied on information gained from earlier animal studies. Six of the discoveries were recognized with a Nobel Prize, among them: the bone-marrow transplantation technique; cloning of the first gene; and discovery of proto-oncogenes in normal DNA, showing that a normal cell could have latent cancer genes.

Animal research for animal health also has resulted in many life-saving and life-extending treatments for cats, dogs, farm animals, wildlife and endangered species. Pacemakers, artificial joints, organ transplants, freedom from arthritic pain, and vaccines for rabies, distemper,

parvo virus, infectious hepatitis, anthrax, tetanus and feline leukemia contribute to longer, happier and healthier lives for animals. New treatments for glaucoma, heart disease, cancer and hip dysplasia can save, extend or enhance the life of a beloved pet, and new reproductive techniques are helping to protect threatened species.

In addition to clinical observation and epidemiology, a number of relatively new non-animal procedures and tests have been developed to supplement animal research. Computer modeling, in vitro and genetic research, and post marketing drug surveillance all serve as valuable adjuncts to basic animal research. But there is no complete alternative to animal research. Still, researchers place a high priority on "The Three Rs" - reduction, replacement and refinement. Here in the United States, our research communities are committed to supporting techniques that:

- a.. Reduce the number of higher species used.**
- a.. Replace animals with other models wherever possible.**
- a.. Refine tests to ensure the most humane conditions.**

Some activists say that humans, not animals, should be used as medical "guinea pigs." However, such activity would contravene the Geneva Convention and the Helsinki Treaty.

For compassionate, as well as scientific, reasons, researchers are deeply concerned about the condition of the animals they study. In the words of the esteemed Dr. Michael DeBakey, chancellor emeritus of the Baylor College of Medicine and director of the DeBakey Heart Center: "These scientists, veterinarians, physicians, surgeons and others who do research in animal labs are as much concerned about the care of the animals as anyone can be. Their respect for the dignity of life and compassion for the sick and disabled, in fact, is what motivated them to search for ways of relieving the pain and suffering caused by diseases."

The essential need for animal research is recognized and supported by medical societies and health agencies around the world, including the American Medical Association, the American College of Surgeons, the American College of

Anesthesiologists, the Association of American Medical Colleges, the Association of Professors of Medicine and the American Veterinary Medical Association.

And although those who seek to end animal research -- either because they choose to reject its well-established validity and usefulness or because they believe the life of a rat is equal in importance to that of a child -- persist in their efforts to subvert medical research with break-ins, thefts, arsons, harassment and intimidation of researchers, there can be no question that the majority of Americans continue to understand, respect and support the need for animals in medical research.



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